

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Goldstein et al
Utility Patent Application 10/073,736
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Title: ACTIVATED LIQUID DISPLAY DEVICE
Art Unit: 2875
Examiner: Amarintides

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Commissioner For Patents
PO Box 1450, Alexandria,
VA 22313-1450

ALTERATIONS IN ATTACHED AMENDMENT

Replace the paragraph on Page 5, lines 18-23 by the following amended paragraph:

Multiple separate chains of components [33-43] 33-38, 42, 44 may be connected to the output of amplifier [22] 32 to implement a plurality of channels operating separate pumps such as pumps 18 and 18' in the same container of the second embodiment shown in Fig 2B,. The type and/or cut-off frequencies of each filter 33 may be different for each channel resulting in a unique response by each pump 18 or 18' to audio stimuli from the microphone 31.

Replace the paragraph on Page 6, lines 17-31 by the following amended paragraph:

The magnetic drive pump comprises a first sub-assembly 60 and a second sub-assembly 61, mounted outside and inside the container, respectively. The first sub-assembly 60 comprising an electric motor 62 with a drive shaft 63 and a cylindrical drive magnet 64 with one axial end mounted thereon. The second sub-assembly 61 comprises an impeller housing 65 with a liquid inlet and a liquid outlet 66, a cylindrical driven magnet 67, and an impeller 68 with one axial end fixed to the driven magnet 67. The base portion 46 is integrally molded with a holder 70 for lens 71, depending mounting legs 72 a seat for the impeller housing 65 and an outwardly protruding, cylindrical magnet housing portion 69 with a blind, outer end. In the assembly, the drive magnet 64 and the driven magnet 67 are mounted for rotation in coaxial, substantially concentric relation surrounding and within the cylindrical housing portion [59] 69, respectively, so that the drive magnet and driven

magnet are magnetically coupled together, whereby the impeller is rotated by the electric motor.

Replace the paragraph on Page 6, line 32 -Page 7, line 3 by the following amended paragraph:

The impeller is mounted for rotation on a stationary spindle 75 mounted coaxially in the cylindrical housing portion housing [59] 69 with upper and lower axial ends of the spindle captivated by the impeller housing and the blind end, respectively.

Replace the paragraph on Page 8, lines 13 -23 by the following amended paragraph:

Following amplitude detector 34, is a differentiator circuit which has a time constant arranged such that rapidly changing signals are passed with little attenuation and slowly rising and falling signals are suppressed resulting in the differentiator's output remaining at or about zero. This signal is applied to the non-inverting input of comparator 37. The inverting input of comparator 37 is held at a fixed DC reference voltage. Because the DC reference voltage [5] 35 is greater than the quiescent output of differentiator [6] 36, comparator 37 usually remains off (logic low). If a significant (above the ambient) audio signal which is detected by 34 and passed by differentiator [96] 36 exceeds the fixed DC threshold level, comparator 37 will change state (to logic high) resulting in the activation of the pump power control 38, the pump and the light

Replace the paragraph on Page 8, line 24- Page 9, line 9 by the following amended paragraph:

In alternative lamp/light control, a transient decay circuit is employed to provide gradual lamp fade in synchronism with the rate at which the globules of more dense liquid fall back through the less dense liquid after spouting up therein in geyser-like manner. The (incandescent) lamp 79 is driven by a conventional voltage controlled AC dimmer circuit. When comparator 37 goes to logic high, a capacitor 96 is charged through diode 95 and held charged for the duration the comparator remains in that state. When comparator 37 returns to logic low, capacitor 16 discharges through resistor [17] 97 with a time constant arranged to be similar to the time taken for the liquid in the vessel to return to its quiescent

state. The voltage on capacitor 96 controls the voltage-controlled AC dimmer circuit (not shown) so that in response to a significant audio signal, the denser liquid 4 is pumped up through the less dense liquid 5 simultaneously with the full illumination of lamp 79. When the audio signal ceases, comparator 37 returns to its logic low state resulting in the deactivation of the pump. The denser liquid is then falling back to the bottom of the container, taking a few moments as determined by the viscosity of the liquids. During this brief period, capacitor 96 controlling the dimmer is discharging through resistor 97 causing light [78] 79 to slowly dim back to darkness.

Respectfully submitted,

By: Robert W.J. Usher Date: 6/10/03
Robert W.J. Usher
Reg. No.30923
(212) 633-1076

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